SCANNING ELECTRON MICROSCOPE ARCHITECTURE AND RELATED MATERIAL HANDLING SYSTEM

ABSTRACT OF THE DISCLOSURE

An embodiment of the present invention comprises a SEM wherein the entire imaging apparatus of the SEM is supported on air bearings. A multi-stage differentially pumped vacuum seal area provides a localized vacuum zone for wafer examination. A wafer leveling mechanism insures that the top surface of the wafer being examined is placed and maintained in a position level with the surface upon which the air bearing supported SEM rests. In use, wafers being examined are loaded into the wafer leveling mechanism, which places and then holds their top surface flush with an examination table. The SEM is then moved on its air bearings and placed in appropriate position over the wafer. Any portion of the wafer can be examined simply by moving the SEM column in the appropriate direction.